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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,225	02/04/2005	Joannes Leonard Linden	310.1040	3797
20311 7590 06/16/2010 LUCAS & MERCANTI, LLP 475 PARK AVENUE SOUTH 15TH FLOOR NEW YORK, NY 10016				
EXAMINER LIGHTFOOT, ELENA TSOY				
ART UNIT		PAPER NUMBER		
1715				
NOTIFICATION DATE		DELIVERY MODE		
06/16/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

info@lmiplaw.com

Office Action Summary

Application No.

10/501,225

Applicant(s)

LINDEN ET AL.

Examiner

ELENA Tsoy LIGHTFOOT

Art Unit

1715

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-5 and 8-35 is/are pending in the application.
- 4a) Of the above claim(s) 11, 13-16 and 23-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-5, 8-10, 12, 17-22, 34 and 35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Response to Amendment

Amendment filed on April 27, 2010 has been entered. Claims 1, 3-5, and 8-35 are pending in the application. Claims 11, 13-16 and 23-33 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention and species.

Claims examined on the merits are 1, 3-5, 8-10, 12, 17-22 and 34-35.

Specification

1. A substitute specification (having requested BRIEF DESCRIPTION OF THE DRAWING) filed on April 27, 2010 has been entered as containing no new matter.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-5, 8-10, 12, 17-22 and 34-35 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al '927 in view of Saito et al (US 5021114), further in view of Otto et al (US 5,643,638) for the reasons of record set forth in paragraph 7 of the Office Action mailed on April 27, 2010.

Response to Arguments

Applicants' arguments filed April 27, 2010 have been fully considered but they are not persuasive.

Applicants submit that Yamada and Saito do not teach pulsed plasma. Otto teaches a method for producing a gradient layer, wherein the composition of the coating is so changed that the substrate side of the coating exhibits excellent adherence and the substrate side exposed to air exhibits high hardness (e.g., col. 4, lines 1-8 and 65-67). Furthermore, these gradient layers do not comprise nanoparticles and therefore are substantially different from the coatings of the presently claimed invention. A skilled person would interpret the teachings of Otto as limited to such gradient layers only. Further, nowhere in Otto there is a suggestion that pulsed plasma is applicable to other types of layers, let alone to the hybrid coating comprising nanoparticles as presently claimed. Thus, a skilled person would not find any motivation to combine the teaching of Otto with the teachings of Yamada and Saito because he would not know whether the use of plasma pulsed CVD methods would contribute to the formation of an inorganic/organic hybrid coating comprising nanoparticles. Otto does not provide the skilled person with an incentive to use the pulsed plasma system in the method of Yamada and Saito, nor would the skilled person have a reasonable expectation of success that such a method would eventually work. Moreover, if a skilled person would combine Otto with Yamada and Saito, he would not know how to combine the teachings. All of these references describe many embodiments all having a number of variations. A skilled person is not provided with any guidance as of which elements should be selected and how to combine them. Without such guidance, it would be an undue burden to test all possible combinations to arrive at the presently claimed methods.

The Examiner respectfully disagrees with this argument. At column 2, lines 44-58, Otto et al describes prior art not their own invention. Otto et al teaches at column 2, lines 44-58 that plasma pulse CVD methods are known and are described in the article of Kersten et al of 1991. In these methods (i.e. not for producing a gradient layer as asserted by Applicants), the electromagnetic radiation which excites the plasma is supplied in a *pulsed* manner for continuous flow of the coating gases. With each pulse, a thin layer (typically approximately 1 nm) is deposited on the substrate. Even substrates which are not stable to temperature can be deposited during a pulse of high power because a pulse interval follows each power pulse. In this way, especially high coating rates are possible without significant temperature loading of the substrate. See column 2, lines 44-58. In other words, Otto et al does not teach that pulsed plasma was known to be limited to particular applications to achieve high coating rates are possible

without significant temperature loading of the substrate only in. Therefore, in contrast to Applicants assertion, Otto does provide the skilled person with an incentive to use the pulsed plasma system in the method of Yamada and Saito to achieve especially high coating rates without significant temperature loading of the substrate, and the skilled person would have a reasonable expectation of success that such a pulsed plasma would produce coatings at high coating rates without raising the temperature of the substrate since Otto does not limit pulsed plasma applications. Thus, it is irrelevant that Otto et al teaches that pulsed plasma may be used for producing the gradient layer.

Thus, in contrast to Applicants argument, the cited combination would have rendered obvious the claimed subject matter to one skilled in the art.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELENA Tsoy LIGHTFOOT whose telephone number is

(571)272-1429. The examiner can normally be reached on Monday-Friday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy Lightfoot, Ph.D.
Primary Examiner
Art Unit 1715

June 14, 2010

/Elena Tsoy Lightfoot/